NOTES ON AUSTRALIAN DIPTERA. XXXVIII.

FAMILY CHLOROPIDAE, Part ii.*

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(*Communicated by Frank H. Taylor, F.R.E.S., F.Z.S.*)

(Twenty-six Text-figures.)

[Read 26th June, 1940.]

Subfamily Oscinosominae.

I have already published a preliminary key to the genera of this subfamily in this series of papers, but in the key given below there are a number of genera included that were unknown to me as occurring in Australia when I wrote my previous key and I therefore present the new synopsis.

Key to the Genera.

1. Hind femur with spinose armature on ventral surface 2
   Hind femur without spinose ventral armature 3
2. Hind femur with a large triangular tooth or process near the apex on the antero-ventral surface; mesopleura haired in part ..... *Merodonta*, n. gen.
   Hind femur with a series of minute spinules on ventral surface ..... *Prionoscelus* Becker
3. Mesopleura with some quite long erect hairs on part of its upper posterior surface. 4
   Mesopleura either dusted or slightly pubescent, not distinctly haired 6
4. Hind tibia with a distinct apical ventral spur ..... *Lasiopleura*, subgen. *Terraeregina* Malloch
   Hind tibia without an apical ventral spur 5
5. Scutellum rounded in outline, the apical edge thick, without setigerous marginal warts ..... *Batrachomyia* Skuse
   Scutellum elongate, the apex thin, with several setigerous warts .. *Macrostyla* Lioy
6. Third antennal segment angular at apex ..... *Scoliophthalmus* Becker
   Third antennal segment disc-like, broadly rounded at apex 6*a*
6*a*. Fifth wing-vein absolutely straight along the discal cell 7
   Fifth vein with a more or less distinct flexure or weak part near middle of discal cell 9
7. Second wing-vein very short, ending in the costa close to apex of first vein, second section of the costa not half as long as third ..... *Siphunculina* Rondani
   Second wing-vein not exceptionally short, ending in the costa far from apex of first, the second section of costa at least as long as third 8
8. Scutellum about twice as long as its basal width, gradually tapered from base to apex, where it is about one-fourth as wide as at its base, with a broad shallow central sulcus; mesonotum trisulcate; hind tibial apical ventral spur large ..... *Euhippelates* Malloch
   Scutellum not longer than its basal width, rounded in outline, not centrally sulcate; hind tibial apical ventral spur microscopic ..... *Platyina* Malloch
9. Humeri each with two quite long bristles, the upper one on each incurved, the lower one backwardly directed; dorsocentral bristles on mesonotum usually quite long and more than two postsutural pairs present 10

* Continued from These PROCEEDINGS, lxiii, 1938, 334.

Humeri with but one bristle each, the upper inwardly-directed one lacking, or if it is present there are but two pairs of postsutural dorsocentral bristles 11

10. Arista normal in form in both sexes; hind tibia nearly always with a more or less evident apical ventral spur or bristle, sometimes very small; scutellum with two or more fine erect discal hairs in addition to the marginal bristles .... *Lasiopleura* Becker

Arista normal in form in the male, with the second segment much elongated and almost as long as the third in the male, in that sex geniculated between these segments; hind tibia without an evident apical ventral spur; scutellum without discal hairs, with only the marginal bristles ..... *Ephydroscinis* Malloch

11. Mesonotum with two pairs of long dorsocentral bristles, the anterior pair close to the suture; ocellar bristles long, proclinate and divergent .. *Oscinelloides*, n. gen.

Mesonotum with three pairs of dorsocentral bristles ..... *Genus novum**

Mesonotum with but one distinct pair of dorsocentral bristles 12

12. Hind tibia with a more or less well developed apical ventral spur .. *Cadrema* Walker

Hind tibia without an apical ventral spur 13

13. Frons flattened and precipitous from above middle to bases of antennae, the posterior third horizontal, the triangle not extending beyond the horizontal part; antennae situated well below middle of eye in profile; notopleural bristles 1 + 1 .... *Benjaminella* Malloch

Frons horizontal, or evenly descending to anterior margin; antennae usually inserted at or above middle of eye in profile; notopleurals variable in number 14

14. Scutellum much longer than its basal width, flattened above, tapered to apex, the sides straight, with a number of strongly setigerous warts on margin apically; mesopleura tomentose on upper posterior angle ..... *Thyridula* Becker

Scutellum not noticeably longer than its basal width, or markedly tapered to apex, sides not entirely straight or with marked setigerous warts 15

15. Face sharply carinate in centre, the anterior outline of epistome seen from below in the form of a wide V; penultimate section of fourth vein fully six times as long as penultimate section of third; frontal triangle well defined .... *Deltastoma* Malloch

Face with or without a central carina, but in all cases with the outline of the epistome seen from below forming a transverse or arcuate outline 16

16. Frontal triangle not defined beyond the immediate area of the ocelli; scutellum rounded in outline or flattened above and slightly tapered to apex where it is almost transverse and furnished with two short stiff bristles, the disc with stiff spinules; face deeply concave in profile ..... *Caviceps* Malloch

Frontal triangle usually well defined, always extending distinctly beyond the ocellar orbit, or the scutellum and face not as above 17

17. Thoracic dorsum with three deeply-punctate sulci, the central one usually a mere line, the others broader, particularly behind ..... *Tricimba* Lioy

Thoracic dorsum without three distinct sulci, sometimes with shallow foveae on the posterior dorsocentral lines that are more or less evidently punctate 18

18. Vibrissal angle very markedly produced, and the proboscis slender, heavily chitinized, geniculated in middle, either section as long as or longer than the lower margin of the head ..... *Madiza* Fallén

Vibrissal angle not markedly produced, if moderately so the proboscis is stout, not sharply geniculated, and at least the apical section is much shorter than lower margin of the head 19

19. Frontal triangle poorly limited, entirely or almost entirely thickly grey-dusted, usually very short, occasionally with a narrow grey line carried to anterior margin; thorax entirely black, either rather distinctly grey-dusted or with distinct quite dense piliferous punctures indiscriminately arranged on its entire dorsal surface and on the scutellum 20

Frontal triangle sharply limited, usually entirely glossy, or very faintly grey-dusted, or the dorsum of thorax and scutellum not densely piliferous punctate, or the general colour yellow, or partly black and yellow; if the thorax is entirely black the mesonotum is either glossy, or if thinly dusted then the hairs are in rather widely separated longitudinal series 21

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* I strongly suspect that *Oscinis cinerea* de Meijere, which I place at this point in my key, will require to be removed to a new genus, but lacking specimens I do not care to erect a new genus for its reception at this time. The species occurs in New Guinea and probably will be found in northern Australia.

20. Gena about one-third as high as eye; parafacial widely visible in profile; scutellum with a shallow depression along each side of disc ..... *Lipara* Meigen
Gena much less than one-third as high as eye; parafacial at most narrowly visible in profile; scutellum without depressions on sides of disc .... *Conioscinella* Duda
21. Mesonotum microscopically shagreened or granulose on surface, with the fine short hairs arranged in rather widely separated longitudinal series .. *Oscinella* Becker
Mesonotum not shagreened or granulose, shiny to glossy, the hairs longer and more numerous, not arranged in definite well-spaced longitudinal series 22
22. Triangle entirely glossy, more than half the length of frons and well defined, or yellow with a small black ocellar spot ..... *Lioscinella* Duda
Triangle usually merely shiny, not half as long as the frons and poorly defined ..... *Botanobia* Lioy

It should be noted that in making generic assignments of the Australian species I have carefully considered the characters of these and the genotypes. In a number of cases species have heretofore been placed in genera other than those to which they are now referred, but these are now, I hope, to be found in their proper places.

The genus *Gaurax* Loew, to which a few Australian species have been referred, does not occur on this continent.

This paper is intended merely as a supplement to my previous papers on the group, and as an aid to Australian students.

Merodonta, n. gen.

This genus, as noted above, may be at once distinguished from all others of the subfamily yet met with in Australia by the prominent subtriangular tooth or process near the apex of the anteroventral edge of the hind femur. A similar tooth occurs on the hind femur in a few genera of other families such as Syrphidae. The hind femur is much thicker than the other pairs, the hind tibia is curved so as to fit against the underside of the femur, and the posterodorsal surface has an elongate depressed area that tapers to a point at each extremity, but the depression is glossy and lacks the short pile characteristic of most genera in this subfamily, thus being more like the depression on the hind tibia of the males of certain Sepsidae or of some males of the genus *Dolichopus* Meigen. In other respects the new genus is quite similar to typical *Oscinosoma* except that there are some hairs on the upper posterior portion of the mesopleura as in *Dasyopa* Malloch.

Genotype, *Merodonta crassifemur*, n. sp.

Merodonta crassifemur, n. sp. Fig. 1.

♀. Occiput and ocellar region black, the remainder of head except the dark centre of face reddish-yellow, antennae of the latter colour, palpi testaceous-yellow. Frons fully two-fifths of the head-width, triangle not very well defined, fading out near middle of frons, bare, minutely shagreened or dusted; vertical, postvertical, and ocellar bristles distinct, some setulose hairs in a series along each orbit, stronger above, the interfrontalia with fine short hairs. The head is greasy so that it is impossible to determine if some dark spots near the anterior margin of the frons are or are not due to discoloration. Eyes much higher than long, sparsely short-haired; gena about one-eighth as high as eye and not equal to width of the short, very broadly apically rounded third antennal segment; vibrissal angle not produced, the hair fine but distinct; arista with the pubescence about as long as its basal diameter; proboscis short and thick; palpi normal. Thorax black, almost glossy, undusted, brownish round the humeral suture, lateral mesonotal margins, and the sutures of the pleura, and merging into brown at apex of scutellum. Mesonotum with rather dense small piliferous punctures, densest in the two broad

shallow postsutural dorsocentral depressions; the bristling as follows: 1 humeral, 1 + 2 notopleurals, 2 postalars, and 1 pair of dorsocentals. Scutellum semicircular in outline, convex on disc, with two long and two short marginal bristles, and numerous short discal hairs. Legs testaceous-yellow, all coxae brown, femora of fore and mid pairs black except their extremities, hind pair entirely black, mid tibiae darkened centrally, hind pair black except at bases. In addition to the preapical process on the hind femur there is a slight elevation of the ventral surface near middle (Fig. 1) that is transversely finely striate. Hind tibia without an apical spine; apical ventral spur on mid tibia well developed, straight. Abdomen tapered to apex, black and shiny on the sclerotized plates, the membrane brown. Hairs pale. Wings greyish-hyaline, veins pale brown. First and second sections of costa subequal in length, second about 1·5 times as long as third; penultimate section of third vein not more than half as long as penultimate section of fourth, the latter about one-fifth as long as its ultimate section; outer cross-vein oblique, about half as long as ultimate section of fifth vein; veins 3 and 4 slightly divergent apically, the latter ending behind the apex of the wing. Halteres yellow. Length, 3 mm.

Type, Townsville, Queensland (G. F. Hill).

Batrachomyia Skuse.

Proc. Linn. Soc. New South Wales, xiv, 1889, 174.

I have been unable to satisfy myself that either of the two species originally included in this genus has been seen by me and an examination of the type-specimens, if such are still available, will be necessary to ensure their identification.

Below I present a revised key to the species known to me.

Key to the Species.

1. Thoracic dorsum reddish-yellow, with four deep black vittae 2
   Thoracic dorsum brownish or reddish-yellow, with at most very faint reddish vittae 3
2. Notopleural area and the scutellum not much paler than the remainder of the thoracic dorsum, the scutellum not blackened on the lateral basal angles; humeri without a black spot; tibiae largely infuscated ..... *major* Malloch
   Notopleural area and the scutellum ivory-white, the latter blackened on the lateral basal angles; humeri with a black spot; tibiae entirely fulvous-yellow ..... *strigipes* Malloch
3. Third antennal segment entirely fulvous-yellow; femora entirely yellow-haired ..... *flavicornis* Malloch
   Third antennal segment deep black; femora not entirely yellow-haired 4
4. Legs entirely fulvous-yellow 5
   Legs fulvous-yellow, with the following parts black: apices of femora narrowly, fore and mid tibiae, except the mid pair which are faintly yellowish centrally, the extremities of hind tibiae, and the entire tarsi ..... *varipes*, n. sp.
5. Notopleural and marginal scutellar bristles not, or but slightly, differentiated from the long erect black hairs; mesopleura with some long stiff black hairs amongst the finer pale hairs; genae with some dark hairs on vibrissal angles; the black spot on ocellar region extending well in front of and behind the orbit of the ocelli ..... *atricornis* Malloch
   Notopleural and marginal scutellar bristles well developed, distinct from the adjacent much shorter black hairs; mesopleura entirely yellowish-white-haired; genae entirely yellow-haired; the black spot on ocellar region hardly extending outside of the ocellar orbit ..... *dubia*, n. sp.

Batrachomyia varipes, n. sp.

Head orange-yellow, a spot enclosing the ocelli, apex of second and all of the third antennal segment, and the aristae, deep black; palpi yellow. Frons a little

longer than wide, quite densely furnished with short black hairs. Eyes with dense pale fine hairs. Genae at middle about as high as width of the third antennal segment, the latter higher than long, broadly rounded at its apex; genal hairs mostly yellow. Thorax orange-yellow or fulvous-yellow, the mesonotum with faint traces of four reddish vittae, but the specimen has evidently been in liquid, so the colour markings are not very clear. Surface mostly abraded, but the hind margin of the mesonotum has some quite long black hairs, and the scutellar hairs that remain are also black. Legs coloured as thorax, the apices of all the femora narrowly black, the fore and mid tibiae black, the mid pair faintly yellowish centrally on dorsum, the middle of the hind tibiae broadly yellow, their extremities black, and all the tarsi black. Wings hyaline, veins brown. Halteres with yellow knobs. Abdomen fulvous-yellow. Length, 6 mm.

Type, Mallee, Victoria (Coll. Lichtwardt, Deutsches Entomologisches Institut).

Batrachomyia dubia, n. sp.

♀. Similar in general colour and structure to *atricornis*, differing in the characters listed in the foregoing key to the species. The black spot on the ocelli extends very slightly behind the posterior level, but not beyond the limits of the ocellar orbit elsewhere, while in *atricornis* it is much larger, elongate triangular, and extends well in front of and behind the orbit of the ocelli. The genae are entirely yellow-haired, and the hairs are finer in front than in *atricornis*. The mesopleural hairs are also much finer than the darker hairs in the other species, while there is a variable number of well-developed notopleural bristles, and on the apical margin below there are a number of black bristles or strong bristly hairs that are much longer than the short erect fine discal black hairs. Length, 6–7 mm.

Type, Upper Beaconsfield, Victoria, x.1930 (J. Evans). Paratype, Narooma, N.S.W., 25.xi.1930 (A. L. Tonnoir).

Batrachomyia atricornis Malloch.

Proc. Linn. Soc. New South Wales, l, 1925, 336.

♂, ♀. Sydney, N.S.W., 14.ix.1924 (Health Dept.).

Macrostyla Lioy.

Atti Ist. Veneto, (3) ix, 1864, 1125.

This genus, also known under the names *Meroscinis* de Meijere and *Rhodesiella* Adams, was not included in my key to the genera of this subfamily. It may be distinguished from closely-related genera by the lack of a sensory area on the hind tibia, and the presence of short but quite evident erect hairs on the mesopleura. In the only Australian species known to me the scutellum is about half as long as the mesonotum, but slightly convex above, coarsely piliferous-punctate on surface including the sides, thin at apex which is rounded and armed with four short warts, each of which has a quite strong bristle surmounting it, of which the apical two are the longer.

Macrostyla punctifrons, n. sp. Figs. 2–4.

♂. General colour black, with a distinct blue-green metallic tinge, most marked on the frontal triangle, least so on the abdomen. Head in profile as Figure 2. Frontal triangle shiny blue-green, shaped as in Figure 3, along each side with about five rather large shallow punctures in each of which there is an inwardly-directed curved pale setule, and on the central line with three large shallow depres-

sions or punctures, the one in front of ocelli broad, the upper part microscopically striate, the remainder of surface less distinctly so. Frons laterad of the triangle dull brownish-black, with a series of pale hairs along eye-margin, and another, less developed, along triangle. Vertical bristles yellowish-white, inner verticals short, postverticals cruciate, ocellars weak. Face concave, bifoveolate, centrally greenish-black, laterally brown, epistome quite sharp and transverse; vibrissae white; parafacial and upper margin of gena white-dusted. Antennae brownish-yellow, third segment infuscated above and at apex; arista pale at base, fuscous beyond, entirely bare. Mouth parts destroyed in type. Occiput shiny black. Eyes bare. Thorax and scutellum entirely black, with a distinct blue-green tinge on the dorsum; mesonotum, scutellum, and mesopleura coarsely and closely piliferous-punctate, the hairs, anterior notopleural, and posterior marginal bristles on mesonotum yellowish-white, posterior notopleural and scutellar bristles black, no sulci on mesonotum. Scutellum longer than its basal width, the marginal warts longer than thick. Postscutellum forming a large convexity on underside of scutellum. Coxae, trochanters, knees narrowly, extreme apices of tibiae and basal

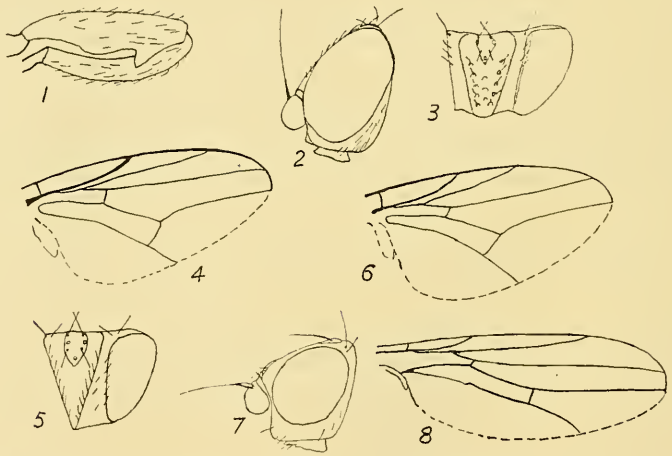

Fig. 1.—*Merodonta crassifemur*, n. sp. Hind femur-tibia.

Figs. 2-4.—*Macrostyla punctifrons*, n. sp. 2, Head in profile; 3, frontal triangle; 4, wing.

Figs. 5, 6.—*Macrostyla regina*, n. sp. 5, Head; 6, wing.

Figs. 7, 8.—*Oscinelloides bispinosa* (Becker). 7, Head; 8, wing.

four segments of tarsi, testaceous-yellow, remainder of legs black. Femora stout, the fore pair with a quite well developed series of bristly hairs from basal third to apex on postero-ventral surface; no short spinose armature on any femur. Wings whitish-hyaline, veins pale brown, yellowish basally. Venation as Figure 4. Abdomen with a blue-green tinge, tergites progressively more densely haired from second to fifth, the hairs black. Halteres missing in type specimen. Length, 3 mm.

Type, Palm Is., Qsld. (Mrs. F. H. Taylor).

The entirely bare, very slender, aristae and coarsely punctured frontal triangle are characters that distinguish this species from any other known to me. The bare arista is met with in only two other species, both African, in this genus so far as is now known to me.

MACROSTYLA REGINA, n. sp. Figs. 5–6.

♀. A glossy-black species, with a bluish tinge on frontal triangle and an aeneous shade on the abdomen. Legs black, trochanters, extreme apices of femora, apices of the tibiae and all of tarsi fulvous-yellow. Wings whitish-hyaline, veins yellow. Knobs of halteres brown. Head black, antennae yellowish-brown, palpi fuscous, sides of frons in front brownish, shiny, the triangle smooth and glossy, with some fine hairs along its sides and attaining almost to the anterior margin (Fig. 5). Vertical width of frons nearly one-half the head-width, sides straight, length about equal to width, about six rather long setulose hairs on each orbit, the vertical, postvertical and ocellar bristles well developed but not very strong. Eye fully 1·25 times as high as long; gena almost linear, dull brownish-black, with fine black lower marginal hairs that are longer at the very slightly produced vibrissal angle. Antennae moderate, third segment disc-like, arista distinctly pubescent, the longest hairs about as long as its basal diameter. Thorax glossy-black, without dusting. Mesonotum and scutellum closely and quite deeply piliferous-punctate, the hairs brown, bristles black. Notopleurals 1 + 2. Scutellum about two-thirds as long as mesonotum, and distinctly longer than its basal width, tapered evenly to the narrowly transverse apex, with two well-developed warts at apex on which there are bristles that are fully two-thirds as long as the scutellum, and on each side at apical third another lateral wart which bears a very short bristle. The single postalar bristle is quite strong and situated on a distinct wart. Legs rather stout. Fore femur without an anteroventral comb, with a series of moderately long fine posteroventral hairs that are yellowish basally and darker apically. Wing as Figure 6. Basal costal bristles both very short and fine. Abdomen broadly ovate, tapered at apex, genital lamellae slender. Length, 2 mm.

Type, Brisbane, Qsld., in house (Dr. A. J. Turner).

SIPHUNCULINA Rondani.

Dipt. Ital., Prod., i, 1856, 128.

I have nothing to add to what I have already published on this genus.

EUHIPPELATES Malloch.

PROC. LINN. SOC. NEW SOUTH WALES, l, 1925, 96.

EUHIPPELATES PALLIDISETA Malloch.

Op. cit., l, 1925, 96.

Five specimens from Sydney, N.S.W., taken in September, October and January (Health Dept.).

PLATYINA Malloch.

Op. cit., lii, 1927, 436.

I have nothing to add to the published records of this genus.

BENJAMINELLA Malloch.

Op. cit., l, 1925, 336.

I have seen no additional specimens of the genotype and only species.

OSCINELLOIDES, n. gen.

This genus may be at once distinguished from related genera by the possession of two pairs of strong dorsocentral bristles, one near hind margin and the other close to the suture. The vertex has one long strong bristle on each side, the post-vertical pair of bristles are mere short hairs, and the ocellar bristles are quite

long, proclinate, and divergent (Fig. 7). This last character, as well as the rather narrow wings, appears to associate the genus with *Stenoscinis* Malloch (*Rhopaloptternum* Duda), an American and African genus. The only specimen that I have is damaged by the pin on which it is mounted, but I can detect one strong humeral, one notopleural, and a long fine hair on the upper margin of the sternopleura. The scutellum is short, with one pair of long apical bristles and a pair of very short fine lateral hairs. The frontal triangle is large and glossy, the antennae short, with rounded third segment, and the aristae are pubescent; genae narrow. The second and third segments of the costa are about equally long, the first posterior cell is slightly narrowed at apex, and the discal cell is almost equally wide from close to base to apex, with the inner cross-vein distinctly proximad of middle (Fig. 8).

Genotype, *Oscinella bispinosa* Becker.

Oscinelloides bispinosa (Becker). Figs. 7–8.

A small slender species superficially resembling certain species of Asteiidae, but distinguished at once by the lack of vibrissae, etc. The face is silvery-white-dusted, the frons in front and the antennae and palpi orange-yellow, remainder of frons black, the triangle glossy, thorax and abdomen glossy-black, legs brownish-yellow, mid and hind femora blackened apically, fore tibiae apically and fore tarsi browned.

Originally described from New Guinea. One female from Rabaul, N. Britain (F. H. Taylor).

There appears to be good reason to erect a genus for the reception of *Oscinis cinerea* de Meijere, as noted in footnote under the foregoing generic key, but probably there are many more species in Australia and New Guinea that should be similarly treated and only a careful consideration of a much larger collection than I have now in hand will definitely establish the relationships of even some of the species now dealt with in such generic concepts as *Lioscinella* and *Botanobia*.

Lasiopleura Becker.

Archiv. Zool. Budapest, i, 1910, 130.

As already pointed out by me, in Part xxxv of this series of papers (Proc. Linn. Soc. New South Wales, lxi, 1936, 23), this genus is the same concept as *Parahippelates* Becker. Below I present a key to the species at present known to me from Australia. All the species have the notopleurals 1 + 1.

Key to the Species.

1. Mesopleura with fine pale hairs on its entire surface (Subgenus *Terraeregina* Mall.) ..... *dasypleura* Malloch
   Mesopleura bare (Subgenus *Lasiopleura* Becker) 2
2. Wing with a large well-defined black or dark brown mark in centre or on costa .. 3
   Wing without a well-defined black or dark brown mark, at most with a linear brownish costal suffusion 5
3. Wing with an elongate dark-brown mark on the costa from about basal third of the second section to its apex that does not extend over third vein on disc; apical section of fifth vein subequal to preapical section of fourth; thorax shiny brownish-black, with slight brownish-grey dust ..... *costomaculata* Malloch
   Wing with a much larger black mark from a little beyond base of second costal section to its apex that extends over disc to fifth vein; apical section of fifth vein very much shorter than preapical section of fourth; thorax brownish-black, hardly shiny, with central portion of anterior half or more of the mesonotum and a large portion or all of the pleura densely white or yellowish-white dusted 4

4. Frons densely white-dusted on upper half or more, not at all shiny; mesonotum with a yellowish-white-dusted central vitta on anterior half or more that extends a little laterad of the dorsocentral bristles and is palest on lateral margins; femora broadly yellow at apices ..... *ornatipennis* Malloch

   Frons less densely white-dusted on upper half, the latter black and rather distinctly shiny; mesonotum with a silvery-white-dusted vitta that does not entirely fill the area between the dorsocentral bristles and tapers off a little behind the suture; femora black, extreme apices yellowish ..... *exquisita*, n. sp.

5. Costal margin of the wing rather noticeably browned from apex of first vein to apex of fourth; dorsum of thorax fulvous-yellow, very distinctly shiny, with very faint dusting; third antennal segment largely brown; arista dark-haired, the longest hairs about as long as its basal diameter ..... *brunneicosta* Malloch

   Wing hyaline or with very faint trace of yellowish on most of its extent; other characters not as above 6

6. Aristae white, with dense short white hairs; femora and tibiae largely or entirely blackened; halteres dark brown; wings hyaline, last section of fourth vein more than twice as long as preceding section; thorax dark fulvous, with distinct but not dense pale dusting ..... *albiseta* Malloch

   Aristae and their hairs dark brown 7

7. Aristae plumose, the longest hairs as long as the width of the third antennal segment ..... *rufescens* Duda

   Aristae much shorter haired, the longest hairs not more than half as long as width of the third antennal segment 8

8. Aristae short haired, densely so on basal half, the longest hairs at least twice as long as its basal diameter 9

   Aristae almost bare, at most with pubescence which is not as long as its basal diameter, if more distinctly haired the hairs not twice as long as its basal diameter 12

9. Mesonotum dark brown, slightly shiny, with a broad central grey-dusted vitta that extends laterad of the dorsocentrals and is most distinct in front; scutellum not as noticeably grey-dusted, yellowish on margin; antennae entirely pale yellow ..... *griseovitta* Malloch, ♂

   Mesonotum not coloured as above, without a broad central grey-dusted vitta 10

10. Pleura entirely reddish-yellow; longest hairs on aristae about half as long as the width of third antennal segment ..... *nigripila* Duda

    Pleura not entirely reddish-yellow; longest hairs on aristae distinctly less than half as long as width of third antennal segment 11

11. Pleura and lateral margins of the mesonotum reddish-yellow, the sternopleura black below; mesonotum not shiny, and without distinct vittae; outer cross-vein of the wing almost twice its own length from apex of fifth ..... *duplicata* Malloch

    Thorax black, propleura reddish-yellow, mesonotum shiny, distinctly vittate; outer cross-vein of the wing at a little more than its own length from apex of fifth ..... *aequalis* Becker

12. Gena very high, subequal in height to the eye; parafacial as wide as third antennal segment; a bright orange-yellow to fulvous-yellow species; the genal bristle very short; tibial spur not as long as diameter of tibia, but strong and slightly bent ..... *conopsea* Duda

    Gena not nearly as high as eye, parafacial not more than half as wide as third antennal segment and the other characters not as above 15

13. Hind tibial spur indistinct, straight, very small and fine, and not nearly half as long as the tibial diameter, sometimes practically lacking; all presutural acrostichals minute 14

    Hind tibial spur curved and stout, usually at least as long as the tibial diameter 15

14. Legs testaceous-yellow, only the apical two segments of the tarsi of mid and hind legs slightly darkened; fifth visible abdominal tergite and hypopygium of male yellow, the former with several rather fine long black downwardly-directed bristles on the sides; thorax with the dorsum evenly and densely coated with grey dust; a line drawn in continuation of the outer cross-vein to costa would pass through second vein close to its middle in male; presutural bristle strong ..... *seticauda* Malloch

Legs with at least the hind femora and tibiae largely fuscous; dorsum of the thorax glossy-black, with a purplish tinge, and two central faintly indicated whitish-dusted lines anteriorly; a line drawn in continuation of the outer cross-vein to the costa would pass through the apex of second vein; venation in the sexes different, the first posterior cell in the male much narrower basally than in the female; presutural bristle lacking ..... *anomala* Malloch

15. Mesonotum shiny reddish to dark brown, with a broad grey-dusted central stripe that extends outside of the lines of dorsocentrals; scutellum grey-dusted on disc; hind tibial spur about as long as diameter of the tibia; antennae very pale yellow ..... *griseovitta* Malloch, ♂

Mesonotum without a grey-dusted vitta covering the intradorsocentral area 16

16. Mesonotum with the acrostichals on the anterior half or more very short and fine, not decussate, biseriate; hind tibial spur not longer than the tibial diameter ..... *taylori*, n. sp.

Mesonotum with some of the acrostichals on the anterior half about half as long as the anterior dorsocentrals, and decussate; hind tibial spur longer than the tibial diameter 17

17. Gena almost as high as the eye; thorax entirely shiny black, with grey or brownish-grey dust, the mesonotum with faint dark vittae, the central linear dark brown one most distinct, especially posteriorly; hind tibial spur strong, much curved 20

Gena not or very little more than half as high as eye 18

18. Thorax shiny brownish-yellow, the mesonotum reddish-brown, with two grey-dusted vittae along the lines of dorsocentrals; third antennal segment largely fuscous ..... *griseovitta* Malloch, ♀

Thorax shiny black or brownish-black, the mesonotum faintly if at all vittate .. 19

19. Legs honey-yellow, all femora largely blackened centrally ..... *parva* Malloch

Legs entirely honey-yellow ..... *parva*, var. *pallipes*, novum

20. Legs entirely tawny-yellow; mesonotum with grey dust, only a central faint dark vitta showing, most distinct behind ..... *nudiseta* Becker

Legs honey-yellow, femora largely blackened; mesonotum with brownish dust and three quite distinct dark vittae ..... *fuscipes* Malloch

Lasiopleura (Terraeregina) dasypleura Malloch.

Proc. Linn. Soc. New South Wales, liii, 1928, 303.

Known from only the type material. Queensland.

Lasiopleura (Lasiopleura) costomaculata Malloch.

Op. cit., xlix, 1924, 329.

Described from Sydney. I have seen an additional specimen from the same locality.

Lasiopleura (Lasiopleura) ornatipennis Malloch. Fig. 9.

Op. cit., xlviii, 1923, 620.

Described from Chelsea, V., the type-specimen a female. I have two additional female specimens from Collaroy, near Sydney, N.S.W., 24.i.1924 (E. W. Ferguson). Apex of hind tibia and spur as Figure 9.

Lasiopleura (Lasiopleura) exquisita, n. sp. Fig. 10.

♀. Head black, face, genae except posteriorly, and anterior half of frons orange-yellow, the whole with changeable silvery-white dusting, most dense on the dark parts; antennae, aristae except bases, and the palpi, orange-yellow. Frons slightly depressed, at vertex two-thirds of the head-width, narrowed to anterior margin, as long as its vertical width. Inner vertical and the proclinate ocellar bristles long, outer vertical not half as long as inner and slightly shorter than the cruciate post-verticals, each orbit with about three pairs of short black setulae, and the inter-frontalia with two or three pairs of cruciate setulose hairs. Antennae rather small,

the arista bare, not twice as long as width of third antennal segment; parafacial about half as wide as third antennal segment; gena about two-thirds as high as eye, with some short black hairs on surface and a short black vibrissa; eye bare, longer than high; genal bristle minute. Thorax blackish-brown, mesonotum glossy, with a silvery-white-dusted vitta from anterior margin to just beyond the suture that does not overlap the dorsocentrals and is abruptly tapered to a point behind; pleura densely silvery-white-dusted except on upper edge; scutellum with a large silvery-white-dusted spot on each side. Bristling normal, presutural strong, presutural acrostichals minute, sparse; sternopleural present; a few short discal hairs on scutellum. Wing whitish-hyaline, veins dark brown, pale brown clouds in costal and anterior basal cells up to the furcation of second and third veins, and along the posterior side of fifth vein to its flexure; a large black mark on disc extending from near middle of second vein to its apex and back over disc to the fifth vein, filling apical half of discal, basal half of first posterior except extreme base, central third of submarginal, and base of second posterior cell. Fifth vein curved evenly down on penultimate section so that the discal cell is parallel-sided on apical two-thirds; ultimate section of fifth vein about half as long as penultimate section of fourth. Halteres whitish-yellow. Legs black, silvery-white-dusted, extreme apices of femora, all of tibiae and tarsi, orange-yellow, sometimes the middle of hind tibiae and apical two segments of tarsi slightly infuscated. Hind tarsi much longer than their tibiae; hind tibial spur minute, a mere setule (Fig. 10). Abdomen coloured as thorax, second (first visible) tergite, and a large spot on each side of third and fourth below the lateral curve silvery-white-dusted. Length, 3 mm.

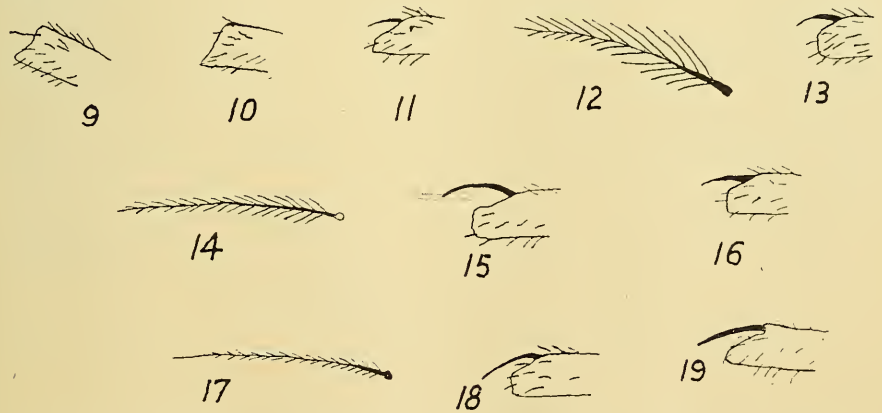

Fig. 9.—*Lasiopleura* (*Lasiopleura*) *ornatipennis* Malloch. Apex of hind tibia and spur.

Fig. 10.—*Lasiopleura* (*Lasiopleura*) *exquisita*, n. sp. Apex of hind tibia and spur.

Fig. 11.—*Lasiopleura* (*Lasiopleura*) *albiseta* Malloch. Apex of hind tibia and spur.

Fig. 12.—*Lasiopleura* (*Lasiopleura*) *rufescens* Duda. Arista.

Fig. 13.—*Lasiopleura* (*Lasiopleura*) *griseovitta* Malloch. Apex of hind tibia and spur.

Fig. 14.—*Lasiopleura* (*Lasiopleura*) *duplicata* Malloch. Arista.

Fig. 15.—*Lasiopleura* (*Lasiopleura*) *aequalis* Becker. Apex of hind tibia and spur.

Fig. 16.—*Lasiopleura* (*Lasiopleura*) *conopsea* Duda. Apex of hind tibia and spur.

Figs. 17, 18.—*Lasiopleura* (*Lasiopleura*) *nudiseta* Becker. 17, Arista; 18, apex of hind tibia and spur.

Fig. 19.—*Lasiopleura* (*Lasiopleura*) *fuscipes* Malloch. Apex of hind tibia and spur.

Type and 1 paratype, Geraldton, W.A., 5.ix.1926 (E. W. Ferguson).

In the specimens of *ornatipennis* I have before me the fifth tergite also is silvery on the sides.

Lasiopleura (Lasiopleura) brunneicosta Malloch.

Proc. Linn. Soc. New South Wales, xlviii, 1923, 620.

I have seen no additional specimens that I can refer to this species. Described from Darwin, N. Territory, Australia.

Lasiopleura (Lasiopleura) albiseta Malloch. Fig. 11.

Op. cit., xlix, 1924, 330.

I have seen two additional specimens of this species from the type-locality, Eidsvold, Queensland. Apex of hind tibia and spur as Figure 11. It may have no significance, but appears to be worth noting here that both these specimens are mounted along with a specimen of *Drosophila albostriata* Malloch.

Lasiopleura (Lasiopleura) rufescens Duda. Fig. 12.

Arb. Morph. Taxon. Ent. Berl.-Dahl., i, 1934, 49.

I have nothing to add to what I said regarding this species in Part xxxv of this series of papers. Type-locality, Darwin, N. Territory, Australia. Arista as Figure 12.

Lasiopleura (Lasiopleura) griseovitta Malloch. Fig. 13.

Proc. Linn. Soc. New South Wales, lxi, 1936, 25.

I had only the male before me when I described this species. I have put it in my key in three captions to take care of possible interpretations of its characters in both sexes. The hairs on the aristae are longer than is the rule in the *nudiseta* group, but they are not as dense on the basal half as in *nigripila* and *duplicata*, nor are they twice as long as the basal diameter of the aristae, though they are distinctly longer than in *nudiseta*. The female before me has the mesonotum with two narrow grey-dusted vittae along the dorsocentral lines and the remainder of the surface brownish-red. In other respects it agrees very closely with the male though the antennae and palpi are not so pale yellow. Apex of hind tibia and spur as Figure 13.

Locality the same as the type-specimen, Mt. Molloy, Queensland (F. H. Taylor).

There is some sexual dimorphism in one or two other species of the genus.

Lasiopleura (Lasiopleura) nigripila Duda.

Arb. Morph. Taxon. Ent. Berl.-Dahl., i, 1934, 48.

I have nothing to add to my note on this species in Part xxxv of this series of papers. Type-locality, Darwin, N. Territory, Australia.

Lasiopleura (Lasiopleura) duplicata Malloch. Fig. 14.

Proc. Linn. Soc. New South Wales, xlviii, 1923, 621.

Known from only the type-specimen. Melville Is., N. Territory, Australia. Arista as Figure 14.

Lasiopleura (Lasiopleura) aequalis Becker. Fig. 15.

Ann. Mus. Nat. Hung., ix, 1911, 111.

Originally described from Sydney from which locality I have already recorded it. I have seen additional material from Como, N.S.W., Blundell's, Molonglo R. and Canberra, Australian Capital Territory. Arista as Figure 14, apex of hind tibia and spur as Figure 15.

LASIOPLEURA (LASIOPLEURA) CONOPSEA Duda. Fig. 16.

Arb. Morph. Taxon. Ent. Berl.-Dahl., i, 1934, 45.

I have nothing to add to my note on this species in Part xxxv of this series of papers. Type-locality, Darwin, N. Territory, Australia. Apex of hind tibia and spur as Figure 16.

LASIOPLEURA (LASIOPLEURA) SETICAUDA Malloch.

PROC. LINN. SOC. NEW SOUTH WALES, liii, 1928, 302.

Originally described from Sydney, N.S.W., and Warburton, Victoria. I have six additional specimens from Sydney.

LASIOPLEURA (LASIOPLEURA) ANOMALA Malloch.

Op. cit., l, 1925, 96.

This quite exceptional species presents a difference in the wing-venation of the sexes that I find in no other species known to me. I had only females before me when I described it, so did not know of the distinction in the sexes.

In the male the marginal cell of the wing is considerably wider than in the female, the second wing-vein is more abruptly curved forward at its apex, and the third vein sweeps downward at its base causing the base of the first posterior cell to be much narrower than in the female.

Originally described from Blue Mts., N.S.W., and Mt. Eba, S. Australia, I have several male specimens from Mt. Eba, apparently belonging to the same collection as the original type lot from that locality.

LASIOPLEURA (LASIOPLEURA) TAYLORI, n. sp.

♂. Very similar in most respects to *parva*. General colour and structure the same, the frons reddish-yellow on anterior half or more, genae the same colour. Uppermost of the three pairs of orbitals much longer than usual; gena more than half as high as eye, with two equal vibrissae. Thorax shiny-black, with rather even brownish-grey dust, the mesonotum not vittate. Anterior acrostichals minute, biseriate, not decussate; presutural bristle long. Legs brownish-yellow, femora largely infuscated. Hind tibial spur quite strong, curved, nearly as long as tibial diameter. Wings brownish-hyaline, veins dark brown; apical section of fifth vein more than two-thirds as long as preapical. Halteres yellow. Abdomen glossy-black. Hypopygium globose. Length, 2 mm.

Type, Blue Mts., 13.iv.1922 (Health Dept.); paratype male, greasy, Hampton, N.S.W., August 1932 (F. H. Taylor).

LASIOPLEURA (LASIOPLEURA) PARVA Malloch.

PROC. LINN. SOC. NEW SOUTH WALES, liii, 1928, 302.

A small species very similar to the one described above, but here the hind tibial spur is longer and stronger and there are one or two of the presutural acrostichal bristles long and strong. Originally described from Sydney, and no new material to hand.

LASIOPLEURA (LASIOPLEURA) PARVA, var. PALLIPES, n. var.

This variety differs from the typical form in having the legs entirely honey-yellow. The genae appear to be more narrowed in front also, but having only one specimen of each form available I do not care to go farther into details. Length, 2 mm.

Type, Narrabeen, Sydney, N.S.W., 21.vii.1923 (Health Dept.).

Lasiopleura (Lasiopleura) nudiseta Becker. Figs. 17–18.

Ann. Mus. Nat. Hung., ix, 1911, 113.

I have two additional specimens of this species, Wahroonga, Sydney. Type-locality, Sydney. Arista as Figure 17, apex of hind tibia and spur as Figure 18.

Lasiopleura (Lasiopleura) fuscipes Malloch. Fig. 19.

Proc. Linn. Soc. New South Wales, xlix, 1924, 330.

Originally described from Sydney and Milson Is. I have seen some additional material from the first-mentioned locality. Apex of hind tibia and spur as Figure 19.

Ephydroscinis Malloch.

Op. cit., xlix, 1924, 331.

I have seen no additional specimens of this genus, nor can I say whether *raymenti* Curran belongs to the genus, as I have not seen the species. If the latter belongs to *Lasiopleura* it will run down to either *ornatipennis* or *exquisita*, but should be distinguishable from either of them by the entirely black femora and tibiae and brown tarsi.

Thyridula Becker.

Ann. Mus. Nat. Hung., ix, 1911, 94.

This genus may be distinguished from others by the presence of four or more short warts at the apex of the scutellum which bear stiff bristles at their apices, the apical pair usually much longer than the others, and in the typical subgenus by the fact that the tarsal claws on the hind legs are much longer and stronger than those on the other legs, and much curved, sickle-like.

There are four described species of the genus, all of them being readily distinguished from the genotype by the yellow, instead of black, ground-colour of the thorax. The genotype was described from New Guinea.

Key to the Species.

1. Hind tarsal claws about as long and strong as the fore and mid pairs; scutellum parallel-sided on basal half or more, rounded at apex, with four small warts on apical edge, the hairs surmounting these quite short and subequal ..... *T.* (*Euthyridula*) *rugosa* Malloch

   Scutellum narrowed gradually from base to near apex, the apex with two rather closely placed short warts on the apex of each of which there is a rather long bristle, the sides each with three to five much smaller warts on which there are setulae shorter than the apical pair; hind tarsal claws about twice as long and strong as the fore and mid pairs, much curved 2

2. Scutellum with a complete black central stripe; face black in centre: at least the mid and hind femora preponderantly black ... *T.* (*Thyridula*) *centralis* Malloch

   Scutellum blackened on apical half or less: femora yellow, or partly browned 3

3. Face and hind tarsi entirely yellow; frons yellow, the ocellar spot black ..... *T.* (*Thyridula*) *atroapicata* Malloch

   Face blackened in centre; apical two segments of hind tarsus black, remainder yellow; frons dark dull brown, yellow on anterior margin, the ocellar spot black ..... *T.* (*Thyridula*) *brunneifrons* Malloch

Thyridula (Euthyridula) rugosa Malloch.

Proc. Linn. Soc. New South Wales, li, 1926, 546; op. cit., lii, 1927, 441.

Known only from North Queensland.

Thyridula (Thyridula) centralis Malloch.

Op. cit., l, 1925, 96.

Originally described from Sydney. I have seen additional specimens from Yass, N.S.W., 27.iii.1930 (K. English), and Black Mt., A.C.T., 13.iv.1931 (A. L. Tonnoir).

THYRIDULA (THYRIDULA) ATROAPICATA Malloch.

Op. cit., xlix, 1924, 358.

Originally described from Bowral, N.S.W. I have specimens before me from Yass, N.S.W., 10.iii.1930, and 2.i.1930 (K. English); and a slightly teneral specimen mounted on the same card with a damaged Ichneumonid labelled Eidsvold, Queensland, 29.iv.1930 (T. L. Bancroft).

THYRIDULA (THYRIDULA) BRUNNEIFRONS Malloch.

Op. cit., lii, 1927, 442.

I have only the type-specimen of this, from Tasmania, before me.

DELTASTOMA Malloch.

Op. cit., xlix, 1924, 359.

The peculiar V-shaped mouth-opening of this genus distinguishes it from all the other Australian genera of this subfamily. Both species have the wings marked much as in *Caviceps punctipennis* Duda, and the venation is also similar. In both genera there is a short setule above the upper posterior notopleural bristle, and the eyes are densely short stiff-haired.

The two species may be separated as below.

A. Antennae entirely yellow; mesonotum yellow, not vittate ..... *unipuncta* Malloch
AA. Antennae yellow, third segment black; mesonotum with four fuscous vittae ..... *atricornis* Malloch

DELTASTOMA UNIPUNCTA Malloch.

Op. cit., xlix, 1924, 359.

The type-specimen was from Sydney, from which locality I have seen a second specimen.

DELTASTOMA ATRICORNIS Malloch.

Op. cit., lvi, 1931, 66.

I have seen only the type specimen, from Sydney.

CAVICEPS Malloch.

Op. cit., xlix, 1924, 355.

There are two species known to me. They may be separated as below.

A. Wings entirely hyaline ..... *flavipes* Malloch
AA. Wing with a small rounded deep-black spot on the costa between apices of second and third veins ..... *punctipennis* (Duda)

When I described the genus I stated that *Oscinella defecta* Becker from the East Indies probably belonged here. The species is unknown to me.

CAVICEPS FLAVIPES Malloch.

Op. cit., xlix, 1924, 356.

Type locality, Sydney. I have before me a second specimen from Sydney.

CAVICEPS PUNCTIPENNIS (Duda).

Arb. Morph. Taxon. Ent. Berl.-Dahl., i, 1934, 56.

Erroneously placed in *Aprometopis* Becker by Duda.

Type locality, Darwin (Palmerston), N. Territory, Australia. I have seen this species.

It may be noted here that in both species of *Caviceps* the bristles on the head and thorax are yellow, while in the two species of *Deltastoma* now before me these bristles are black. In both genera the eyes are densely short stiff-haired.

There is an upwardly-curved upper humeral bristle sometimes present in *Caviceps*, but the presence of but one pair of dorsocentrals and two posterior notopleurals will serve to distinguish it from *Lasiopleura*.

Madiza Fallen.

Sp. Ent. nov. Dipt., 1810, 19.

This is the genus generally listed under the name *Siphonella*. Although the genotype and certain other species referred here are readily distinguished from others in the same section of the family by the typically produced epistome, short face as compared with the occiput, and the long, geniculated, slender proboscis, there are some species that have been placed in the genus that are undoubtedly but distantly related to the genotype. Some such species have been placed herein merely on the basis of the elongate proboscis, which in itself is rather an unreliable character as it varies to a considerable extent in both length and thickness. However, there is one Australian species that is so closely related to the genotype and so similar to it in almost all particulars that I have no hesitation in placing it here. In fact it may yet be proven that it is identical with one of the already described species, but meanwhile I consider it better to describe it as new, pending discovery of more specimens and some data on the life-history.

Madiza australis, n. sp. Fig. 20.

♂. An entirely shiny black species, with the frons dull brownish-black, the ocellar triangle grey-dusted; antennae, palpi, proboscis, and legs black, the mid and hind tarsi slightly brownish; knobs of halteres blackened above; wings hyaline, veins except ultimate section of fifth brownish-black. Head in profile as Figure 20; face with a triangular wedge-shaped carina between the bases of antennae that extends to below middle, the lateral edges raised; frons a little more than one-third of the head-width and about 1·5 times as long as wide, parallel-sided, the hairs short and dense, triangle confined to upper third, shiny, with greyish dust, ocellar bristles very short, irregular, verticals short. Eyes densely pale-haired. Thorax and scutellum densely piliferous-punctate, the latter short, rather narrow at apex, with two quite closely placed apical and two very much shorter preapical bristles; mesonotum slightly, upper part of mesopleura more distinctly, grey-dusted. Legs normal; mid tibial apical ventral bristle short. Wings hyaline. First costal section three-fourths as long as second, and a little longer than third, the latter about 1·5 times as long as fourth. Fourth vein ending almost in the wing tip, third slightly before it; penultimate section of fourth vein a little longer than penultimate section of third, about twice as long as outer cross-vein and one-fourth as long as ultimate section; ultimate section of fifth vein very much weaker and two-thirds as long as preceding section. Abdomen broadly ovate, depressed, more distinctly shiny than the mesonotum, and with some very short pale fine hairs. Length 2 mm.

Type, Blundell's, A.C.T., 30.i.1930 (L. F. Graham).

The genus is almost cosmopolitan in its distribution and the genotype, if correctly recorded, occurs in the Palaearctic and Nearctic regions. I can not distinguish European and North American specimens as distinct species.

Tricimba Lioy.

Atti Ist. Veneto, (3) ix, 1864, 1125.

I have already presented a key to the species of this genus from Australia and have nothing to add to the data on it except that I have a single specimen of a species that may be distinct from any that I have previously identified from this continent.

Cadrema Walker.

Jour. Proc. Linn. Soc. London, iv, 1860, 117.

I have presented already a key to the species of this genus known to me, but have before me now two additional species which are described below and give an enlarged key to the Australian species. I follow recent custom in the use of *Cadrema* instead of *Hippelates*.

All the species have a distinct, though often quite small and inconspicuous, apical ventral spur on the hind tibia which should be carefully looked for as it is easy to overlook it even with a high-power lens. The species from Australian localities are not at all closely related to the common type in North America which is suspected of carrying disease of the eye; all the New World forms that annoy one by buzzing round the face during hot weather have the hind tibial spur much more pronounced, and in several other respects differ from those now under discussion.

Key to the Species.

1. Third antennal segment entirely deep-black; hind tibial spur brownish-yellow, not as long as the apical width of the rather thick tibia, quite stout and curved, situated close to apex; mesonotum with three glossy-black vittae on a yellow ground, the central one complete, the laterals abbreviated at each extremity and slightly interrupted at suture ..... *atricornis* Malloch

   Antennae either entirely yellow or with a very slight darkening of the upper edge of the third segment; hind tibial spur black 2

2. Hind tibial spur much curved and distinctly longer than the tibial diameter, situated well before the apex; thoracic dorsum with a large quadrate mark in centre of hind margin and a spot near each humeral angle deep black, the ground colour yellow ..... *bancrofti* Malloch

   Hind tibial spur not as long as the tibial diameter, slightly curved and situated at or very close to the apex; thorax not marked as above 3

3. Mesonotum with rather coarse piliferous punctures, the scutellum slightly rugose or uneven; mesonotum largely black, ground colour yellow; scutellum partly black 4

   Mesonotum and scutellum with a few weak setigerous punctures, sparsest on scutellum; disc of mesonotum with distinct black vittae on a yellow ground; scutellum yellow; sternopleura partly or entirely yellow 6

4. The black mesonotal vittae fused on their entire length, only the lateral margins yellow, the postsutural black vittae separated narrowly from the central black complex mark; scutellum broadly black across the base; sternopleura entirely glossy-black ..... *nigridorsata* Malloch

   Mesonotal black vittae separated on disc 5

5. Mesonotum with three or five black vittae; scutellum almost entirely black; sternopleura entirely glossy-black; abdomen black, with yellow fasciae ..... *fasciventris*, n. sp.

   Mesonotum with two broad black vittae separated on disc by a broad orange-yellow streak, partly fused behind; scutellum broadly yellow at apex; sternopleura yellow; dorsum of abdomen glossy-black ..... *atriventris*, n. sp.

6. Pleura entirely yellow, without black markings; mesonotum yellow, with a linear black anchor-like mark in centre that does not extend to hind margin; frontal triangle glossy-black ..... *atriseta* Malloch

   Pleura with at least one black mark; mesonotum not marked as above 7

7. Sternopleura largely black centrally, two black spots on mesopleura, and one on pteropleura; mesonotum yellow, with a large U-shaped black mark from anterior to near posterior extremity, the free ends behind, and two small black marks between the latter behind the suture ..... *abbreviata* Malloch

Sternopleura yellow, only one black pleural mark present 8

8. Tibial spur of moderate length; mesonotum yellow, with two central black vittae that are fused and widened in front of suture, and on each side behind suture a short black sublateral vitta that is widened behind ..... *unimaculata* Malloch

Tibial spur minute; mesonotum yellow, with two broad black vittae that are almost interrupted at the suture and fused on posterior third, the fused part narrowed to hind margin ..... *fergusoni* Malloch

Cadrema fergusoni Malloch.

Proc. Linn. Soc. New South Wales, lii, 1927, 438 (*Hippelates*).

I have seen five additional specimens of this species from the type locality, Sydney (Health Dept.).

Cadrema fasciventris, n. sp.

♀. Head orange-yellow, triangle black except a yellow mark on each side of ocelli at vertex; occiput with a black mark on each side above; third antennal segment with a faint apical suffusion, most evident at insertion of arista, the latter dark brown and pubescent; palpi orange-yellow. Frons about as long as its width at vertex, narrowed to anterior margin where it is a little more than one-third of the head-width, surface hairs black and quite strong, orbital setulae distinct above; ocellars shorter than postverticals; triangle to or very slightly beyond middle of frons. Eyes haired, higher than long; genae not as high as width of third antennal segment, with a series of black hairs on lower margin, the vibrissae quite strong. Thorax shiny yellow, mesonotum with the black vittae not well defined in type, appearing as three presuturally and five postsuturally, scutellum almost entirely black, and the pleura black except on propleura, but possibly darker than usual because of the pinning. Mesonotum and scutellum distinctly piliferous-punctate, the dorsocentral depressions broad behind. Notopleurals 1 + 2, scutellum with two long apical and two much shorter preapical bristles and some discal hairs. All hairs and bristles black. Legs yellow, quite strong, hind tibial spur black, not as long as tibial diameter. Wings hyaline, rather narrow, veins brown. First costal section more than four-fifths as long as second, the latter about 1·5 times as long as third; penultimate section of third vein not more than half as long as that of fourth and about as long as outer cross-vein; veins 3 and 4 slightly divergent at tips. Halteres yellow. Abdomen ovate, yellow, with a broad black fascia across centre of each tergite. Length, 2 mm.

Type, Sydney, N.S.W., 7.ii.1924 (Health Dept.).

Cadrema atriventris, n. sp.

♀. Head orange-yellow, a black mark on each side of upper occiput and a black central streak on triangle, third antennal segment narrowly dark at apex above, arista slender, brown, pubescent; palpi brown. Frons more flattened than in the preceding species, the triangle extending to almost the anterior margin and longer than its vertical width, a series of erect hairs just outside its lateral edges. All hairs black, stronger than in *fasciventris*.

Thorax glossy orange-yellow, with two broad black vittae that are not clearly defined in type, but the short sublateral postsutural vittae appearing as distinct, apical third or more of scutellum yellow, pleura yellow, with the anterior spiracle and a broad irregular fascia on lower part of upper half and the postnotum black.

Mesonotum and scutellum more coarsely piliferous-punctate than in *fasciventris*, the hairs and bristles as in that species. Legs orange-yellow, as in *fasciventris*. Wings hyaline, veins brown. First costal section about two-thirds as long as second, the latter subequal to third, marginal and submarginal cells at apex of first vein about equally wide, veins 3 and 4 not noticeably divergent at tips. Halteres yellow. Abdomen ovate, tapered at tip, genital processes slender, glossy-black in colour. Length, 2 mm.

Type, Donnybrook, W.A., 29.viii.1926 (E. W. Ferguson).

LIPARA Meigen.

Syst. Beschr. Zweifl. Insekt., vi, 1830, 1.

I have before me a species that closely resembles the genotype of this genus in general features and have no hesitation in placing it herein.

It looks like a very large *Conioscinella*, but differs from the members of that genus in having the genae about one-third of the eye-height, the parafacials well exposed in profile (Fig. 21), the frons more than half the head-width in front, narrowed behind, with the triangle continued narrowly as a grey-dusted stripe to beyond the middle of frons; the inner vertical bristles undeveloped; the mesopleura coarsely and irregularly vertically furrowed and almost entirely pale tomentose; scutellum subtriangular, highly convex on disc, and impressed along each side from near base to apex.

LIPARA AUSTRALIS, n. sp. Figs. 21, 22.

♀. Head dull brownish-black, anterior margin of frons narrowly brownish-yellow, occiput and triangle grey-dusted, the latter carried as a narrow stripe to or beyond middle of frons; genae and parafacials grey-dusted but changeable when seen from various angles; frontal orbits narrowly grey-dusted along eyes; hairs yellowish-white, a few of the upper orbital setulae and all the bristles black. Frons at vertex half the head-width, widened to anterior margin; triangle about one-third of the vertical width, not sharply outlined, some of the hairs on the edges of the grey-dusted part; inner verticals lacking in type-specimen, outer pair rather short, equal to the postverticals, the ocellars erect and weaker. Antennae brownish-yellow, third segment largely infuscated apically, about as long as wide and broadly rounded at apex; aristae fuscous, tapered from base to near middle, and bare. Face bifoveolate, the central carina high and quite sharp, widened and flattened between bases of antennae; parafacial in profile about half as wide as third antennal segment; gena fully one-third as high as eye, short-haired on lower two-thirds or more, vibrissae undeveloped. Proboscis glossy-black, not stout, geniculated, the apical section about two-thirds as long as lower margin of head; palpi long, brownish-yellow. Eye about 1·5 times as high as long, quite densely pale-haired. Thorax black, shiny, with brownish-grey dust, mesonotum with 4 or 6 black vittae, the central pair narrowly separated, the submedian pair wide, partly interrupted at suture, the sublaterals postsutural, indistinct; surface quite densely and rather coarsely piliferous-punctate, the hairs decumbent and pale; no humeral, notopleurals 1 + 2, postalars 2, dorsocentrals indistinct, and a series of bristly hairs along the posterior edge close to the deep suture between the mesonotum and scutellum, the latter subtriangular, prominently convex on disc and with a broad shallow impression on each side of apical half or more, appearing pinched in on sides, the apex with about six short bristles on minute wart-like elevated bases situated near the lower edge. Pleura glossy-black in part, grey-dusted on mesopleura, pteropleura, hypopleura, lower part of the sternopleura, and the mesopleura

rather coarsely vertically rugose. Legs brownish-yellow, coxae, greater part of femora, and middle of tibiae brownish-black, most extensively so on hind legs. Mid tibia with black apical ventral spur. Wings greyish-hyaline, brownish-tinged basally and costally, veins thick and brown, venation as Figure 22. Abdomen shiny black, quite densely grey-dusted, bases of tergites 3 and 4 blackened, more widely so on sides and centrally, tergite 5 with a large black shiny mark on each side at base. Hairs whitish-yellow, short above, longer below. Genital lamellae rather long and slender, with stiff, erect, bristly, blunt-tipped, black hairs on entire length. Halteres yellow. Length, 5·5 mm.

Type, Black Mt., A.C.T., 24.iv.1936, on nest of *Iridomyrmex defecta* (A. J. Nicholson).

It appears worthy of note that except in *Conioscinella griseopleura* the frons is parallel-sided in all Australian species of that genus. This particular species appears to be almost intermediate between the two genera, but most of its characters align it with *Conioscinella* rather than with *Lipara*.

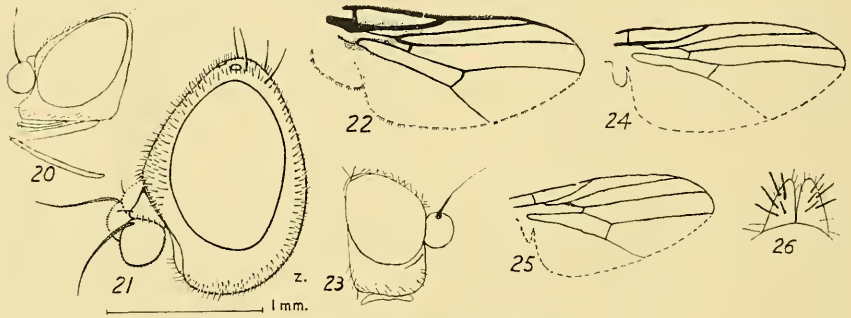

Fig. 20.—*Madiza australis*, n. sp. Head in profile.
Figs. 21, 22.—*Lipara australis*, n. sp. 21, Head in profile; 22, wing.
Figs. 23, 24.—*Conioscinella griseopleura*, n. sp. 23, Head in profile; 24, wing.
Fig. 25.—*Conioscinella pallidiseta*, n. sp. Wing.
Fig. 26.—*Conioscinella perdita*, n. sp. Genital processes of female.

Conioscinella Duda.

Folia Zool. Hydrobiol., ii, 1930, 71.

This genus, as I accept it on the basis of the characters of the genotype, contains a number of robust black species, with usually part of the legs and anterior edge of the frons brownish-yellow, the wings hyaline, frontal triangle small, usually dull, and not very sharply defined on the edges, frons haired, eyes distinctly pubescent, aristae pubescent to bare, the notopleural bristles 1 + 2, mesonotum sometimes closely piliferous-punctate, the hairs rather dense and indiscriminately arranged, not in well separated longitudinal series.

One of the species I place in the genus, *perdita*, is rather aberrant, the hairs on the disc of the scutellum being very few in number, and the convexity more marked than usual. Apart from this species there are two rather well marked segregates in the Australian material, using the wing venation as a criterion. In one, containing *pallidiseta*, *vandiemeni*, and *punctulata*, and possibly *griseopleura*, the fourth vein is noticeably deflected beyond the outer cross-vein so that for a variable distance the first posterior cell is wider there than it is about one-third from its apex, and the penultimate section of the third vein is not half as long as

the penultimate section of the fourth vein. In the other group the fourth vein is straight and gradually deflected to apex so that the first posterior cell is gradually widened to apex, and the penultimate section of the third vein is more than half as long as the penultimate section of the fourth.

Key to the Species.

1. Practically the entire mesopleura, all the pteropleura, and the sternopleura except behind, densely grey-dusted; ultimate and penultimate sections of fifth vein subequal in length; gena about one-fourth as high as eye, the vibrissal angle rounded; distance across the wing from apex of fifth to fourth vein about 1·5 times as great as distance from fourth vein to costa; scutellum convex, with many microscopic pale hairs ..... *griseopleura*, n. sp.
   Mesopleura in front and the entire sternopleura glossy-black; gena not one-fourth as high as eye, vibrissal angle generally produced 2
2. Legs entirely straw-yellow; all hairs and bristles on head and thorax luteous; ultimate section of fifth vein almost as long as penultimate; mesonotum shiny black, with even grey dust, the hairs not set in evident punctures .... *flaviseta*, n. sp.
   Legs not entirely yellow, in part black or dark brown; if the hairs and bristles of the head and thorax are luteous the mesonotum is without distinct grey dust and is very distinctly piliferous-punctate 2*a*
2*a*. Frontal and thoracic bristles and apical ventral spur of mid tibia fulvous-yellow; ultimate section of fifth vein about two-thirds as long as penultimate; gena about one-tenth as high as eye; scutellum flattened, densely and much more coarsely piliferous-punctate than the mesonotum, apical pair of bristles close together ..... *pallidiseta*, n. sp.
   Frontal and thoracic bristles black or dark brown 3
3. Entire frons dull black; genae not glossy below, entirely dull; outer cross-vein of the wing oblique, two-thirds as long as penultimate section of fourth vein; scutellum slightly flattened on disc, the apical pair of bristles separated by a distance greater than that across posterior ocelli, two shorter pairs on the sides and a number of fine discal hairs ..... *fuscofrontata*, n. sp.
   Frons yellow or orange-red in front; outer cross-vein about half as long as the penultimate section of fourth vein 4
4. Scutellum with two long and two slightly shorter preapical bristles, the disc with but two or four fine erect hairs; first section of the costa not more than half as long as second; genital processes spinose in female ..... *perdita*, n. sp.
   Scutellum with two long apical and two or more pairs of very much shorter laterals, the disc with many stiff decumbent hairs; first section of the costa much more than half as long as the second 5
5. Mesonotum with four uniformly broad black or black-brown vittae 6
   Mesonotum not distinctly vittate 7
6. Vittae shiny dark brown, intervening spaces lead-grey-dusted; halteres yellow; no dark cloud on apex of first wing vein ..... *mackerrasi*, n. sp.
   Vittae glossy-black, intervening spaces brownish-dusted; halteres brown; a faint brownish cloud on apical portion of first wing-vein ..... *emmesia*, n. sp.
7. Mesonotum closely and rather deeply piliferous-punctate; width of first posterior cell of the wing at the outer cross-vein equal to that of marginal and submarginal cells combined at same point 8
   Mesonotum almost smooth, not distinctly piliferous-punctate; first posterior cell of the wing at the outer cross-vein distinctly narrower than marginal and submarginal cells combined at the same point 9
8. Antennae, palpi, apices of the femora, fore and mid tibiae, and all the tarsi orange-yellow ..... *punctulata* Becker
   Antennae partly infuscated, palpi brown, all tibiae blackened centrally, and the tarsi brownish-yellow ..... *vandiemeni*, n. sp.
9. Mesonotum with the short hairs black or dark brown ..... *beckeri*, n. sp.
   Mesonotum with the short hairs whitish-yellow ..... *beckeri*, var. *grisella*, n. var.

Conioscinella punctulata (Becker).

Ann. Mus. Nat. Hung., ix, 1911, 158 (*Oscinella*).

I am accepting as this species a number of specimens that are of the usual robust form, and have the antennae, palpi, anterior margin of the frons and the greater part of the legs orange-yellow. The apices of the femora are usually quite broadly pale, and only the hind pair of the tibiae are browned centrally; the tarsi are entirely pale. The bristles of the head and thorax are black, the hairs on mesonotum short and stiff, mainly dark, those on posterior portion of humeri, and some on lateral margins, being yellowish-white and finer. The frons is about half the head-width in front, narrowed slightly behind; gena not as high as width of third antennal segment and about one-tenth as high as eye. Disc of mesonotum and scutellum distinctly and closely piliferous-punctate. Dust present on upper half or more of the mesopleura. Wings hyaline, veins fuscous. First costal section about two-thirds as long as second, penultimate section of fourth vein about three times as long as penultimate section of third, the inner cross-vein much proximad of level of apex of first vein; ultimate section of fifth vein about three-fourths as long as penultimate section. Length, 2·5 mm.

Five specimens, Sydney, N.S.W., January 1925 and November 1923 (Health Dept.).

Conioscinella griseopleura, n. sp. Figs. 23, 24.

♂, ♀. Head black, frons not pale in front, narrowly grey-dusted along each eye, the triangle more densely dusted on edges than centrally, a grey-dusted line extending almost to anterior margin of frons; face grey-dusted; gena slightly brownish below, nowhere shiny, grey-dusted; frontal hairs white, bristles black. Triangle short, obcordate, not two-thirds as wide as vertex, and about one-third as long as frons, with stiff short black hairs invading surface almost to the ocelli; ocellars strong, a little shorter than the postverticals, the latter incurved; orbital setulae very short, pale to, or above, middle, from there to vertex black; surface hairs decumbent, directed mesially. Antennae black, third segment reddish-yellow below, wider than long, broadly rounded at apex. Arista with the basal two segments black, thick, second segment about four times as long as thick, third brown, slender and almost bare. Face rather deeply bifoveolate, carina in centre broad, flat above between antennal bases where it is about one-third as wide as anterior margin of frons. Gena about one-fourth as high as eye, with pale yellow hairs, vibrissae weak and short. Eye distinctly higher than long, rather densely pale-haired. Parafacial narrowly visible in profile (Fig. 23). Proboscis stout, glossy-black, geniculated; palpi black. Thorax black, slightly shiny, quite densely grey-dusted even on the sternopleura. Mesonotum with quite dense, rather small, piliferous punctures, the pile short, decumbent, and yellowish-white. Humeral bristle undeveloped, notopleurals 1 + 2. Scutellum short, round in apical outline, convex on disc, rather thin at apex, surface as that of mesonotum; apex with four short bristles. Legs black, knees, and tarsi except apices, tawny-yellow, black parts grey-dusted and with short pale hairs. Femora stout, mid tibial apical ventral spur strong, black, as long as apical diameter of the tibia. Wings greyish-hyaline, veins brown. Shape and venation as Figure 24, the exceptionally long ultimate section of fifth vein characteristic of the species. Abdomen stout, shiny black, with grey dust, and short pale hairs. Genital lamellae of female slender, slightly dilated at apices, of moderate length, with a few very fine hairs. Halteres with yellow knobs. Length, 3 mm.

Type, ♂, and allotype, Forrest, Canberra, A.C.T., 29.xii.1929 (A. L. Tonnoir).

CONIOSCINELLA PALLIDISETA, n. sp. Fig. 25.

♀. Head black, frons rather broadly orange-red in front, antennae except upper apical part of third segment, and the entire palpi, orange-red, genae broadly shiny brownish-red below, grey-dusted above; triangle slightly grey-dusted, face grey-dusted in foveae. Frons parallel-sided, a little more than one-third of the head-width and about 1·25 times as long as wide, triangle very small, extending about two-fifths of the frontal length and about half the width of vertex, no hairs invading its surface; bristles as in *griseopleura*, but the short setulae along the eye-margins are all black, the vertical and postvertical bristles are yellow, and the short frontal hairs are mainly black, posteriorly. Third antennal segment a little wider than long, rounded at apex; aristae black, tapered at base, with very short dense black pubescence. Face quite deeply bifoveolate, the central carina linear, not flat above, and much narrower there than in *griseopleura*; the epistome produced as in the genotype from Europe. Gena about one-tenth of the eye-height, with a series of short black hairs above lower edge and a short black vibrissa. Eye a little higher than long, with short stiff pale hairs. Proboscis glossy-black, stout, geniculated. Thorax black, shiny, mesonotum almost glossy, the dust most evident on the dorsocentral lines and lateral margins, only the posterior upper portion of mesopleura, the pteropleura and hypopleura grey-dusted. Mesonotum quite densely but not coarsely piliferous-punctate, the pile black in front and on disc, yellow behind, and laterally behind suture. Humeral, notopleural (1+2), postalar, and dorsocentral bristles yellow. Scutellum slightly elongate, narrowly rounded at apex, disc slightly flattened and much more densely and coarsely piliferous-punctate than the mesonotum, especially apically, the hairs black, the two long apical and two short preapical bristles yellow. Legs rather stout, coxae, femora except their extremities, and middle of hind tibiae, blackish-brown, remainder fulvous-yellow; hairs pale. Wings hyaline, veins brown. Venation as Figure 25. Abdomen glossy brownish-black, with short yellowish hairs. Genitalia of female as in *griseopleura*. Halteres yellow. Length, 2·25 mm.

Type, Eaglehawk Neck, Tasmania, 17.xi.1922 (A. L. Tonnoir).

CONIOSCINELLA FUSCOFRONTATA, n. sp.

♀. Head black, frons dull, not yellow in front, triangle hardly shiny, greyish-dusted, genae blackish-brown, paler above, nowhere shiny; antennae black, third segment reddish-yellow, infuscated above and at apex; aristae fuscous; hairs and bristles black. Frons parallel-sided, a little longer than wide, and more than one-third of the head-width; triangle less than half the frontal length, and about three-fifths the width of vertex, without surface hairs. Ocellar bristles rather strong, slightly reflexed, not as long as the postverticals, the latter a little longer than the outer verticals, the inner verticals very small; surface hairs on frons stiff, rather dense, the setulae along each eye-margin short, the uppermost about as long as the inner vertical. Antennae inserted a little below middle of eye in profile, third segment broader than long, broadly rounded at apex; arista with the second segment thicker than base of third, about four times as long as thick, third subnude, entire aristal length about four-fifths that of anterior width of frons. Eyes higher than long, with short stiff pale hairs. Parafacial not visible in profile. Face deeply bifoveolate, the central carina linear, widened above but not flat. Gena about one-seventh of the eye-height, angular in front, with two or three series of black hairs and a short black vibrissa. Thorax shiny black, lightly grey-dusted, under a high power lens appearing minutely alutaceous, with quite dense

fine decumbent black hairs not set in punctures, the hairs longer and denser posteriorly; notopleurals 1+2. Pleura shiny, mesopleura behind greyish-dusted, appearing alutaceous or microscopically striate. Scutellum shorter than its basal width, tapered behind, almost transverse between apical pair of bristles, the latter longer than scutellum, rather widely separated and cruciate, each side with one shorter bristle, and close in front of the latter a short setule, the disc flattened, like the surface of mesonotum but the hairs sparser and stronger. Legs brownish-black, fore tibiae brown, bases of tarsi brownish-yellow. Apical ventral spur of mid tibia about as long as apical diameter of tibia. Wings brownish-hyaline, veins brown. Second costal division about 1·5 times as long as first and nearly twice as long as third, the latter about one-fourth longer than fourth; penultimate sections of third and fourth veins subequal in length; outer cross-vein oblique and about three-fourths as long as penultimate section of fourth vein, ultimate section of fifth vein about two-thirds as long as penultimate. Abdomen shiny black-brown, the hairs dark. Genital lamellae slender, finely haired. Halteres with the knobs whitish-yellow. Length, 2 mm.

Type, Sydney, N.S.W., 25.ix.1921 (Health Dept.); paratype, S. Australia (A. H. Elston). The paratype appears to have been in liquid at some time, is badly abraded, and lacks the antennae.

Conioscinella mackerrasi, n. sp.

♂, ♀. A very distinctively marked species, the four broad parallel-sided dark-brown shiny vittae on the mesonotum setting it apart from any other species in the genus, or in the genera related to it. The intervening spaces are lead-grey-dusted which is not the case in the next described species, and another feature that distinguishes it from the latter is the very much less shiny surface of the dark vittae which appear microscopically granulose here while in *emmesia* they are polished and smooth as if abraded. Frons dull brownish-black, reddish-yellow on anterior margin, with a grey-dusted lateral line on each side in front and in centre from ocelli to the pale anterior part; antennae brownish-black, third segment reddish-yellow basally below, more widely so in female; palpi brown in male, reddish-yellow in female. Frons a little longer than wide, about two-fifths as wide as head, with the usual stiff hairs, the vertical and ocellar bristles moderately strong, each orbit with about six stiff erect setulae. Eye higher than long, with numerous pale hairs. Gena brown, paler and whitish-grey-dusted above, not as high as width of third antennal segment, and about one-seventh as high as eye. Antennae moderately large, the aristae subnude. All hairs and bristles dark. Mesonotum rather flattened, the dark brown vittae almost entire, the laterals slightly abbreviated in front. All hairs and bristles dark. Surface hardly punctate. The usual bristles present, humeral moderate, both posterior notopleurals distinct. Legs black, in male with the tarsi slightly paler, brown, the bases and apices of the tibiae, and all the tarsi, fulvous-yellow in female. Wings hyaline, veins brownish-black. First costal section in male about two-thirds as long as second, in female about three-fourths, penultimate section of fourth vein a little longer than penultimate section of third, first posterior cell widened slightly to apex, ultimate section of fifth vein about two-thirds as long as penultimate one in male, comparatively shorter in female. Halteres yellow. Abdomen brownish-black, shiny, with apices of the tergites brownish. Length, 1·5–2 mm.

Type, male, allotype, and four paratypes, Sydney, N.S.W., the type and allotype taken in September 1924, the others on different dates in same year. Health Dept.

CONIOSCINELLA EMMESIA, n. sp.

♀. Very similar to *mackerrasi*, differing markedly in having the mesonotal vittae glossy and smooth as if abraded, the frontal triangle more distinctly shiny, the frons with a more distinct central pale line, which is broader and in some cases almost yellow and spot-like just in front of the triangle, the genae are paler, yellow, and the vibrissal angle more pronounced. The five specimens appear slightly teneral and have the legs dirty yellow, with no distinct black markings, but the brown knobs of the halteres suggest that the specimens are mature. Wings as in *mackerrasi*, but the ultimate section of the fifth vein a little longer in comparison with the penultimate one. Length, 2 mm.

Type and four paratypes, Sydney, N.S.W., August 1924 (Health Dept.).

One specimen has the second vein forked near its apex. It may be worth noting that with one exception, taken in May, all the specimens of *mackerrasi* were taken in September and October.

CONIOSCINELLA VANDIEMENI, n. sp.

♂, ♀. A shiny-black species, with the antennae black except the lower basal portion of the third segment, and the legs largely black, only the extremities of the tibiae, and the tarsi, pale brown. Halteres brownish-yellow. Frons distinctly longer than wide, parallel-sided, and about one-third of the head-width, narrowly brownish-yellow in front, with the usual stiff surface hairs, the palpi brown. Genae brown, paler above, not half as high as width of third antennal segment and about one-tenth as high as eye, the vibrissal angle slightly produced; eye much higher than long, finely soft-haired. Thorax shiny-black, the mesonotum densely piliferous-punctate, the hairs dark. The type female showing traces of four slightly more shiny stripes that in abraded specimens may show as vittae, the central pair abbreviated behind. Wings hyaline, veins black, the venation much as in *mackerrasi*, but the first posterior cell is widened beyond the outer cross-vein, and again slightly at apex. Length, 1·75 mm.

Type, female, Eaglehawk Neck, 15.xi.1922; allotype, Burnie, Tasmania, 25.x.1922 (A. Tonnoir).

CONIOSCINELLA BECKERI, n. sp.

♂, ♀. A small black species, with the mesonotum distinctly shiny and almost without punctures at bases of the fine erect black hairs. The frons has the anterior margin more or less distinctly reddish-yellow, and the antennae are usually largely orange-yellow, the third segment variably infuscated above and in front. The legs are variable in colour, but the fore coxae in the male and all the femora in both sexes are blackened, while the tibiae are usually all broadly blackened in the male sometimes only the hind pair are blackened in the female. The knobs of the halteres are pale yellow. Frons a little longer than wide, about two-fifths the head-width, with the usual stiff black surface hairs, the lateral marginal setulae very short, the vertical and ocellar bristles short but strong, the ocellars as usual slightly bent back and placed a little behind the level of the anterior ocellus. Eye higher than long, erect, with the hairs very short and white; gena not half as high as width of the third antennal segment and about one-tenth as high as eye. Antennae of moderate size, third segment disc-like; arista thickened on basal third or more, minutely pubescent. Mesonotum hardly dusted, the upper half of mesopleura and the pteropleura with dark-grey dust; mesonotal hairs and bristles dark. Some distinct piliferous punctures in the two lines of dorsocentral depressions and on the scutellum. Legs normal; mid tibia with the usual short black apical ventral

spur. Wings hyaline, veins black. Marginal cell wider than submarginal a little beyond apex of first vein, the two combined distinctly wider than first posterior cell at the level of outer cross-vein, the latter cell gradually widened to apex; ultimate section of fifth vein about half as long as penultimate one. Halteres with yellow knobs. Abdomen glossy brownish-black. Length, 1·5–2 mm.

Type, male, allotype, and a large series of both sexes, Sydney, various dates September to February (Health Dept.), paratypes, Como, N.S.W.; Mt. Wellington, Mt. Field, Strahan, and Cradle Valley, Tasmania, November to February (A. L. Tonnoir). One paratype from Blundell's, A.C.T., has the anterior margin of the frons more broadly orange-yellow than usual and the antennae almost entirely of that colour, while the legs are also preponderantly fulvous yellow.

Conioscinella beckeri, var. grisella, n. var.

Differs from the typical form in having the entire face and genae as well as the frons except upper third or less, the antennae, and the tibiae and tarsi except the central portion of the hind pair, fulvous-yellow. The hairs on the frons and mesonotum are also yellowish-white. In other respects similar to the typical form. The mesonotum is also more distinctly, evenly pale-grey-dusted. Length, 1·5 mm.

Type, Sydney, N.S.W., 15.x.1924 (Health Dept.).

Conioscinella perdita, n. sp. Fig. 26.

♀. Resembles in general colour the variety described above, having the head, including the genae, antennae, palpi, the frons except above, orange-yellow, the ocellar triangle short, poorly defined in front, slightly shiny, and grey-dusted. Frons distinctly longer than wide, parallel-sided, about two-fifths as wide as head, with the usual hairs and bristles, the hairs in front pale, behind and the bristles black. Gena higher in front than behind, the vibrissal angle distinctly produced and with a yellow setule, height of gena at middle equal to the width of third antennal segment; eye with fine yellow hairs, higher than long and about six times as high as gena. Thorax shiny-black, with quite even and distinct grey-dust on mesonotum and upper portion of pleura. No evident piliferous punctures on mesonotum or scutellum, the hairs on former fine and dark, the scutellum convex on disc, with two moderately long and rather widely separated apical and two shorter preapical bristles, and two or four fine discal hairs. Legs orange-yellow, femora and centre of hind tibiae infuscated. Wings hyaline, veins pale brown, yellowish at bases; the first section of the costa not half as long as second. Halteres yellow. Abdomen shiny blackish-brown, with grey dusting, the apices of the tergites brownish-yellow. The genital processes of the female are spinose (Fig. 26). Length, 1·5 mm.

Type and one paratype, Ooldea, S. Australia, 20.viii.1926, no collector's name on the written label. Many paratypes from Sydney (Health Dept.), one from Molonglo River, A.C.T.

I have seen no other species of the genus in which the characteristic spines or bristles are present on the genital lobes of the female, though they may occur and I have not noticed them in specimens examined. Usually the presence of such genital spines or bristles indicates that the species deposits its eggs in openings made by the female in plants or other substances.

Conioscinella flaviseta, n. sp.

♂, ♀. A small black species with shiny-black evenly yellow-grey-dusted mesonotum, the cephalic and thoracic hairs and bristles luteous, and the legs yellow.

Head brownish-black, dull, with grey dust, anterior margin of frons, antennae, face, genae, palpi, and proboscis, brownish-yellow to orange-yellow. Frons at vertex about one-half the head-width, narrowed to anterior margin and about as long as its vertical width, triangle dusted and not defined, outer verticals longer than inner and postvertical bristles, the ocellars small, orbital setulae minute. Eyes haired, fully eight times as high as gena; vibrissal angle slightly produced; proboscis geniculate. Arista pubescent. Thorax with no punctures at bases of the dorsal hairs, the latter numerous and depressed; bristling normal, humeral long; scutellum convex on disc, rounded in outline with no punctures at bases of the few erect discal hairs and with two long apical and two much shorter preapical bristles. Postnotum glossy-black. Legs yellow. Mid tibial spur short, both it and all the hairs yellow. Wings hyaline, veins brown. First costal division a little more than half as long as the second and slightly longer than third, the latter a little longer than fourth; the fourth vein ending a little behind wing-tip, the third well before it; penultimate section of fourth vein about twice as long as penultimate section of third; first posterior cell slightly widened at apex; ultimate section of fifth vein nearly as long as penultimate section and at least twice as long as penultimate section of fourth vein. Distance from apex of fifth vein to fourth vein subequal to that from fourth vein to costa. Halteres yellow. Abdomen shiny black-brown, broadly ovate, with most of the hairs yellowish. The genital lamellae of female quite long and very slender, much as in *Lioscinella similis*, with some microscopic fine pale hairs and no bristles. Length, 1–1·5 mm.

Type, female, allotype, and 7 paratypes, Sydney, N.S.W., October-January (Health Dept.).

A rather aberrant species in this group, rather similar to *perdita* in some respects.

Oscinella Becker.

Archiv. Zool. Hungar., i, 1910, 150.

This generic name was proposed as a substitute for *Oscinis* of authors, not Latreille, and originally the concept included several subsequently recognized or acknowledged genera. Now it is restricted to much narrower scope, and in Australia there is apparently but one species known, the genotype, *frit* Linné. This species has several characters that distinguish it from its closest relatives, consisting of a glossy elongate frontal triangle, very short pubescent aristae, short-haired eyes, granular or alutaceous mesonotum with rather widely separated serially arranged fine hairs, a rather distinct bristly hair that is forwardly directed at the upper posterior angle of the sternopleura, and a general black colour.

Some, but not all of these characters are found in other genera, the most distinctive being the granular surface and serially arranged sparse hairs of the mesonotum. The sternopleural armature is the same in the group in which the scutellum is yellow or partly yellow and the triangle glossy and almost invariably black, and there is no forwardly-directed sternopleural bristle in *Conioscinella* and *Botanobia*.

Oscinella frit (Linné).

Syst. Nat., ed. 10, 1758, 598; ed. 12, 1767, 994 (*Musca*).

I can detect no differences between European, North American and Australian specimens of this species.

I have seen only two species correctly referable here, *frit*, in which the arista is entirely black or black-brown, and the third segment very short dark pubescent,

and *maura* Fallén, in which the basal two segments are black and the third white and quite long white pubescent. There are no records of *maura* from outside of Europe as far as I know.

In *frit* the whole insect is black except the apices, and sometimes the bases, of the tibiae, and the bases of the tarsi, which are yellow in varying degrees of intensity. Length, 1·5–2·5 mm.

Botany Bay, N.S.W.; Blundell's, A.C.T.

The larvae feed in the stems of cultivated grains such as wheat and oats.